0 1620 0600 6728

TD
172
E6353
v.16-17
1993-1995

SCI/TECH

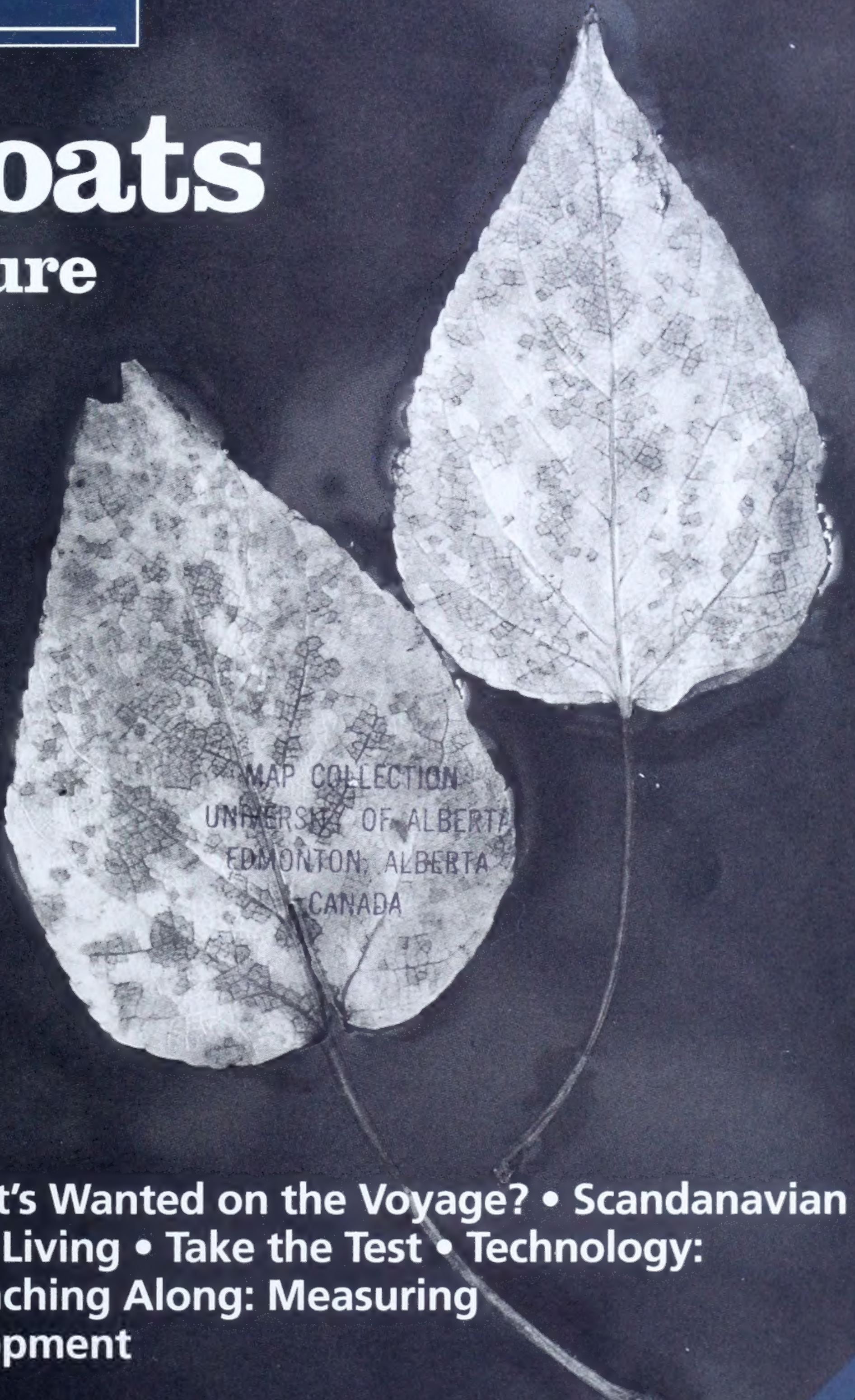
Digitized by the Internet Archive
in 2014

https://archive.org/details/enviroviews16n1

EDMONTON VOLUME SIXTEEN NUMBER ONE SUMMER 1993

ENVIRONMENT VIEWS

Lifeboats
to the Future



MAP COLLECTION
UNIVERSITY OF ALBERTA
EDMONTON, ALBERTA
CANADA

Alberta's Ark: What's Wanted on the Voyage? • Scandanavian Design for Calgary Living • Take the Test • Technology: Jekyll or Hyde? • Inching Along: Measuring Sustainable Development

environment week '93

Lifeboats

How to Build Alberta's Ark 3 *Special Places 2000* *by Susan Kelly*

The Push to Launch a New Way of Life 9 **Calgary's Affordable Sustainable Community Project** *by Scott Rollans*

Find Your Spot on the Lifeboat 12 **How Well Do You Know Your Way Around Environmental Issues?**

Can Technology Bail Us Out? 15 **The Technological Fix** *by Alice Major*

Charting a Course for Sustainable Development 19 **Indicators** *by Debby Waldman*

EDITOR'S NOTEBOOK

A lifeboat can take you from a place of danger to a place of safety. This issue of *Environment Views* tells the stories of people in Alberta who are trying to move us away from environmental crisis and toward a more environmentally secure world.

Susan Kelly's article on *Special Places 2000* describes an Alberta government proposal to protect our wild lands. If the proposal succeeds, it will preserve for the future a package of intact ecosystems: an ark.

Sustainable communities will also be gifts to future generations. They will be created to fit into a world with more people and fewer resources. But that's not their only attraction. When Scott Rollans talked with people about Calgary's Affordable Sustainable Community Project, they told him they liked the community design because it would let them meet their neighbours. A solid sense of community rivals things such as energy-efficient housing and co-operative composting as key ingredients in a sustainable neighbourhood.

Technologists think up new ways to clean up old environmental problems and avoid new ones. Their innovations will no doubt be important as the next generation tries to do more with less. But environmental philosophers say we need clear thinking about the values embedded in technology before we can expect technology to solve our environmental problems. Alice Major, in her story on the technological fix, explores our hopes and fears about relying on technology to bring environmental crises under control.

The Alberta Round Table and other groups in Canada have taken on the challenge of identifying sustainable development indicators. It's tough going. They are trying to measure progress toward something we still don't know the shape of: sustainable development. Should we stop and study more, or muddle on and learn as we go? Debby Waldman covers this emerging field.

This issue also marks a passage from a place of safety to a place of danger. After 11 years in the steady and capable hands of Maryhelen Vicars, *Environment Views* has a new editor. We'll miss Maryhelen and her dedication to making *Environment Views* an important magazine. If I rock the boat in my new role, I hope I also manage to keep it afloat.

Lynn Zwicky is an Edmonton writer and researcher who specializes in environmental issues.

Cover photo: Mark Degner

ENVIRONMENT VIEWS

Environment Views is published quarterly by Alberta Environmental Protection. Each issue deals with a specific topic from various viewpoints with the aim of increasing awareness of environmental issues among Albertans. *Environment Views* is directed by an independent board with representation from environmental groups, government and industry. The views expressed by the publication are not necessarily those of Alberta Environmental Protection.

Subscriptions are free and can be obtained by mailing the card on the back cover.

Permission to reproduce any part of this publication for commercial purposes should be obtained by writing the address below. Reproduction for other purposes should credit this publication.

Letters to the editor are welcomed, and should be sent to:

Environment Views
Alberta Environmental Protection
Communications Division
Main Floor, Oxbridge Place 9820 – 106 Street
Edmonton, Alberta T5K 2J6
427-6267

Articles appearing in this magazine are indexed in Environmental Periodicals Bibliography.

Editor: Lynn Zwicky, Rollans Laing Communications Inc.
Assistant Editor: Barbara McCord
Designer: Grant Elston, Silicon Type & Graphics Ltd.

Editorial Board: Ian Burn, executive director, Energy Efficiency and Environmental Affairs Branches, Alberta Department of Energy; David Dodge, Canadian Parks and Wilderness Society; Arlene Kwasniak, Environmental Law Centre, Edmonton; Peter Lee, head, Natural and Protected Areas, Alberta Environmental Protection; David McCoy, senior environmental scientist, Husky Oil, Calgary; Fred McDougall, vice-president and general manager, Weyerhauser Canada Ltd.; Trevor McFadyen, student, University of Alberta; Charlotte Moran, assistant director of communications, Alberta Environmental Protection; Kim Sanderson, Canadian Society of Environmental Biologists; Annette Trimbee, manager, Environmental Assessment Section, Alberta Environmental Protection; Bob Westbury, vice-president of Environment and Public Affairs, TransAlta Utilities Corporation.

Special thanks to Archie Landals for his help with this issue.
Printed on recycled paper.

Alberta
ENVIRONMENTAL PROTECTION

UNIVERSITY LIBRARY
UNIVERSITY OF ALBERTA

Susan Kelly

SPECIAL PLACES 2000

How to Build Alberta's Ark

Boreal forest near Athabasca.

ARCHIE LANDALS

Timber leases claim over 200,000 square kilometres of Alberta's boreal forest. A protected areas system will lock some of it away for good. Chris Anderson, director of forestry with Canfor in Grande Prairie, says the systematic approach of *Special Places 2000* will make it easier for industry to set areas aside.

MAP COLLECTION
UNIVERSITY OF ALBERTA
EDMONTON, ALBERTA
CANADA

The experts have had their say about what we should preserve of Alberta's wild lands. Soon it will be your turn.

Special Places 2000 is a government proposal to protect Alberta's natural diversity for future generations. The objective is a completed parks system by the end of the decade and the policy outlines a strategy for piecing it together. It divides the province into 19 natural regions and sets targets for the amount of land to be protected in each.

The planners who drafted the proposal are now looking for approval to put it into action. Archie Landals is a systems planner with the Alberta Parks Service who has worked on *Special Places 2000* for the past year. "We want support from the public and from the politicians to complete the system by 2000, and to say, 'yes, the framework of the natural regions is a good thing to guide completion of the system.'"

The proposal appears to have political support. At the end of April, the government appointed a panel to collect public comment on *Special Places 2000*. The report of the

CLEVE WERSCHLER

Cliff Wallis, above; and Archie Landals, below.

five-member panel, chaired by former environment minister Fred Bradley, is due the end of June.

"It's like a wind change," says George Newton, advocacy chair for the Canadian Parks and Wilderness Society (CPAWS). "For 20 years we've been fighting to get protection for wilderness, and have actually lost wilderness protection in Alberta. That people in high positions are actually seeing that we have to do something and making that kind of commitment I think is significant, because it signals a change in the upper echelon, where it's been so hard."

Special Places 2000, and projects such as the World Wildlife Fund's Endangered Spaces Campaign, are the direct descendants of the World Commission on Environment and Development, or the Brundtland Commission. The Brundtland report, *Our Common Future*, recommended that countries protect 12 per cent of their land mass in a natural state for the benefit of future generations. The reason is that wild lands are irreplaceable. Once they're gone, they're gone—along with genetic resources of unknown potential and a piece of our spiritual home.

> ***Special Places 2000***
> **is a blueprint that shows what we need to protect.**
>
> *– Cliff Wallis*

If *Special Places 2000* is successful, by the end of the decade Alberta will have a comprehensive network of protected areas that meet four goals:

- to protect the full range of natural environmental diversity in Alberta,
- to protect natural landscapes for outdoor recreation,
- to provide the public with access to, and interpretation of, natural landscapes,
- to protect areas for adventure travel and ecotourism.

The diversity protection goal has a clear target—100 per cent representation of Alberta's diversity. No benchmark exists for the heritage, recreation and tourism goals.

"We really don't know what the tourism and recreation targets should be," Landals says. He hopes that public input will help set these targets.

George Newton of CPAWS likes the proposal's broad scope. "It goes beyond Endangered Spaces." Newton says Endangered Spaces is mostly about preserving threatened ecosystems, but *Special Places 2000* looks at outdoor recreation and heritage appreciation as well.

Special Places 2000 is a systematic approach to the problem of protection. The proposal's foundation is a hierarchy of six natural regions, 19 subregions and three levels of "natural history themes," which are local areas delineated with increasing precision according to their natural features.

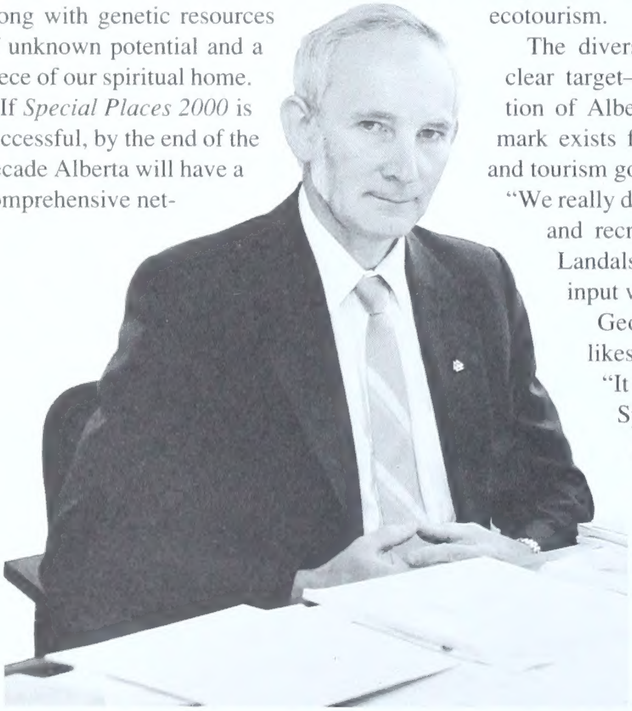
The team doing the groundwork for the project has evaluated all of Alberta's existing protected areas, with the exception of sites with virtually no protection value such as picnic grounds next to highways.

"That's the first time we have totally evaluated everything," says Landals. "For the first time, we know what's in the system." This data-intensive approach should lead to a protected areas system that truly represents Alberta's diversity, rather than just a collection of unique sites.

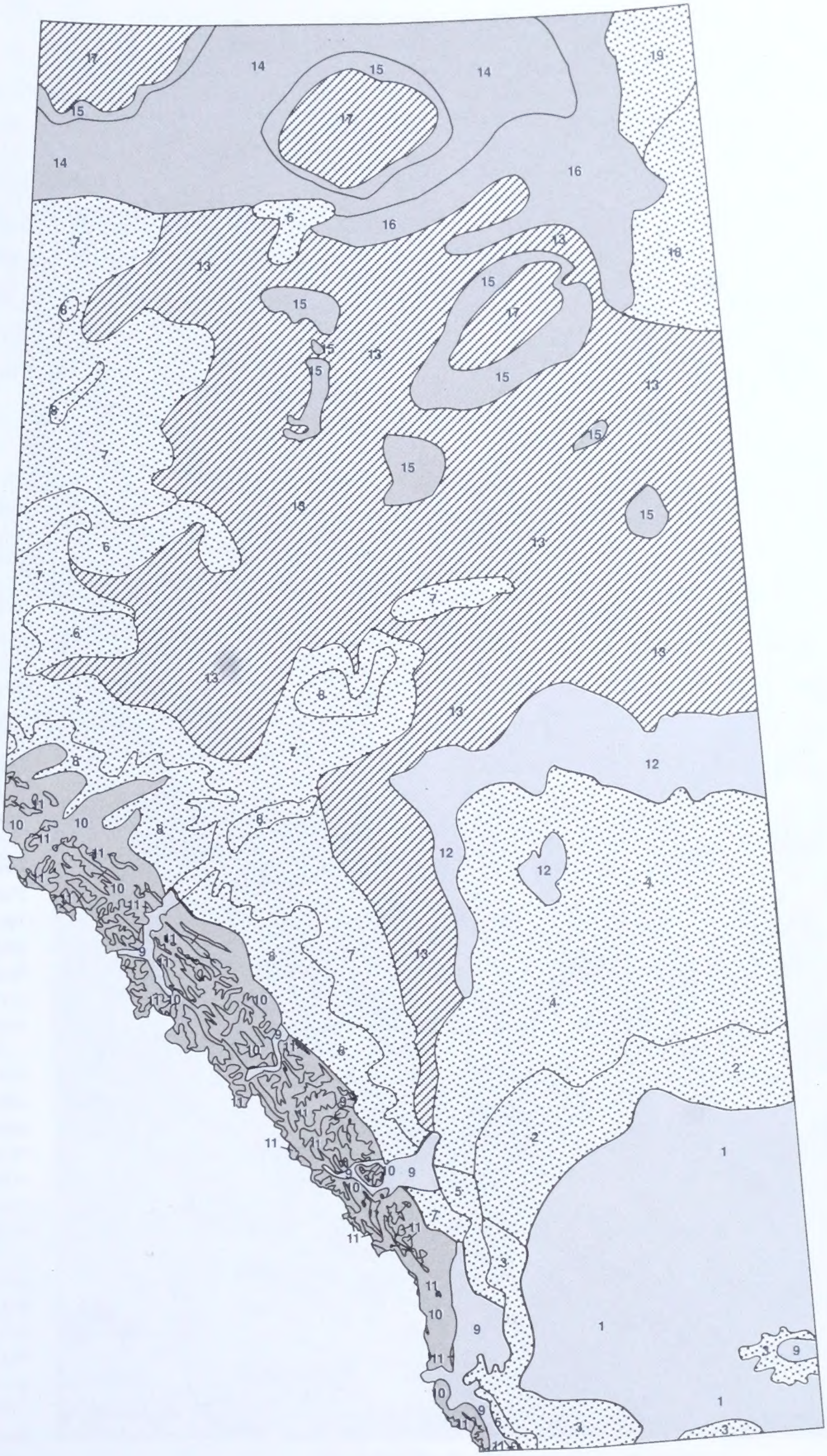
"We're getting to a much more efficient way of handling the data and knowing what the options are than ever before," says Landals. "We might get to the point where we can say: this is what we've got, this is what we're missing and these are the options to fill them."

Maps of the natural regions and subregions, in one form or another, have been around for a decade or more. But they have never been the foundation of a government policy on protected areas. Cliff Wallis of the Alberta Wilderness Association says *Special Places 2000* is a big improvement.

"With this document, we have a blueprint or a map to follow, to say 'OK, what don't we have enough of?' Our biggest problem all along has been that there has been no stated government policy to get full representation for the natural diversity that's out there in Alberta. At least this gets us thinking about things in an organized fashion."


GOVERNMENT OF ALBERTA

Level of Existing Protection for Alberta's Natural Areas



- ░ Little or No Protection
- ☐ Some Protection
- ▨ Moderate Protection
- ■ Good Protection

Natural Regions and Sub-Regions of Alberta

Grassland Natural Region

1 – Mixedgrass
2 – Northern Fescue
3 – Foothills Fescue

Parkland Natural Region

4 – Parkland
5 – Foothills Parkland
6 – Peace River Parkland

Foothills Natural Region

7 – Lower Foothills
8 – Upper Foothills

Rocky Mountain Natural Region

9 – Montane
10 – Subalpine
11 – Alpine

Boreal Forest Natural Region

12 – Dry Mixedwood
13 – Central Mixedwood
14 – Wetland Mixedwood
15 – Boreal Highlands
16 – Peace River Lowlands
17 – Subarctic

Canadian Shield Natural Region

18 – Athabasca Plain
19 – Kazan Upland

SOURCE: ALBERTA PARKS SERVICE

The proposal's systematic approach also appeals to industry. It will focus attention on the areas that are not well represented and show, as a package, what needs to be set aside.

"Industry thrives on predictability," says Chris Anderson, director of forestry for Canfor. "If that kind of approach could be established, if reasonable numbers could be agreed on, if we could get it to a situation where it's predictable and we know the rules, that would be desirable from a broad industry point of view."

Anderson says industry supports the concept behind *Special Places 2000*, but wonders how the program will look on the ground. He anticipates conflicts in local areas. The planners say they will pick their sites carefully. "We'll focus on the easy wins first, and then continue to work on the tough ones where there are conflicts as we go along," says Archie Landals. "The further you go, of course, the tougher it's going to be. But I see lots of opportunities for win-wins out there."

Special Places 2000 creates targets for the amount of land needed to represent ecosystems in each of its regions. For example, 250 square kilometres of organic wetlands would adequately protect the Peace River Lowlands. Since over 6,000 square kilometres are already protected in Wood Buffalo National Park, the target has been reached and exceeded. The picture is not as rosy everywhere. Overall, the system is about 50 per cent complete.

Special Places 2000 targets 360 square kilometres of the Kazan Uplands for protection. No legislation now protects this remote, undeveloped piece of the Canadian Shield in Alberta's northeastern corner.

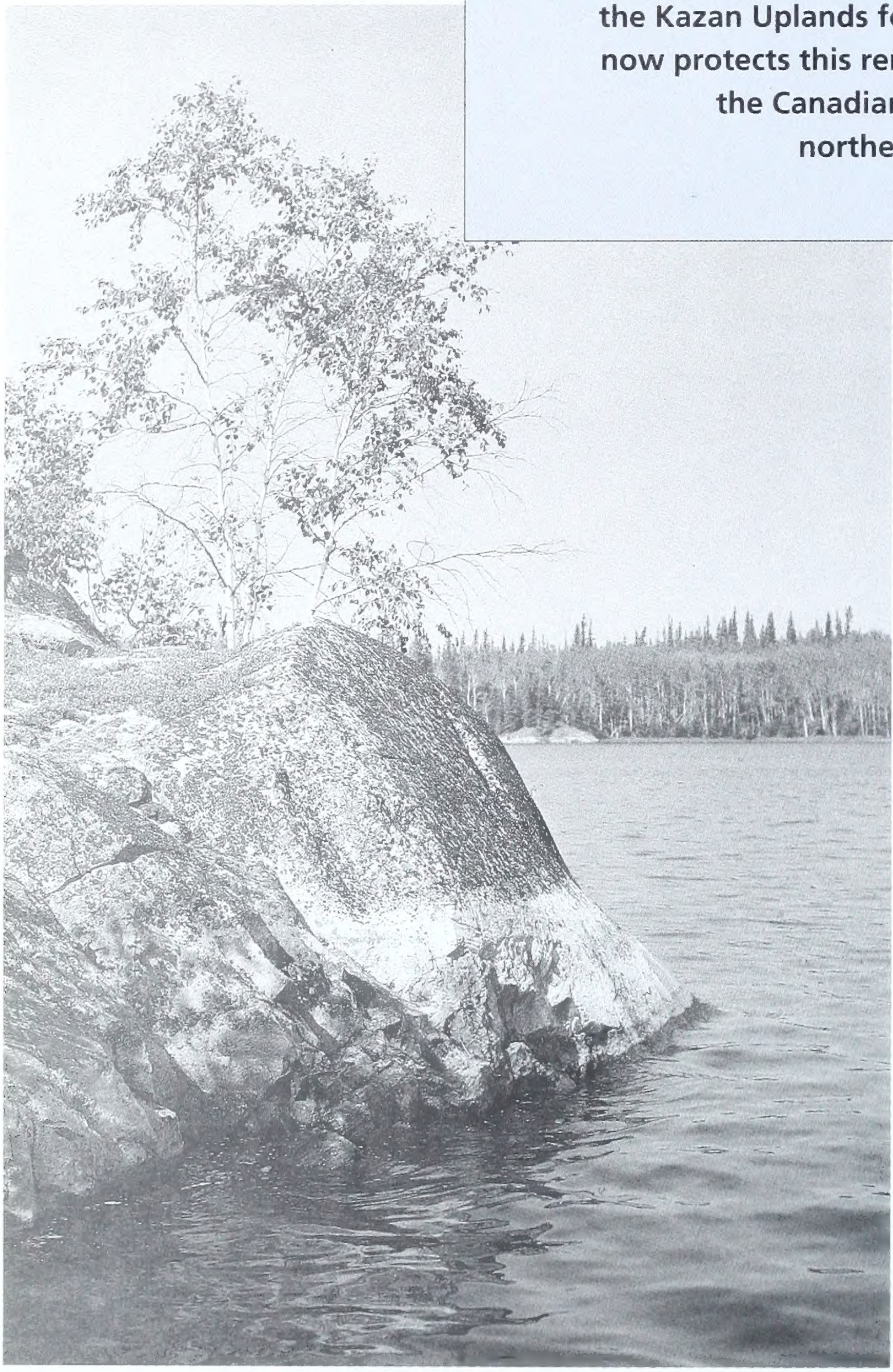
Can we get the other 50 per cent together by the end of the decade? Public review of the proposal will make things slow, and as it stands, it takes about two years to designate a new ecological reserve.

"I'd like to be optimistic," says Dave Chabillon, assistant deputy minister, Alberta Parks Service. "It does take time to get the land base legislated but land can be identified and placed under protective reservation until the full public review and considerations are given. So in my judgment, the year 2000 is an attainable goal."

Protected areas are only the core of the system and planners caution that they do not adequately address the requirements of large carnivores and migratory birds. Ideally, "zones of protection" would surround the core areas, where some development might be permitted, but some land use controls would still apply.

"To achieve your protection targets, you are going to have to look at managing the entire landscape," says Cliff Wallis. "These target areas are the safety cores. The last thing that we want is for these things to become islands in a sea of total obliteration."

In addition, the targets only cover the protection goal of *Special Places 2000*. Add in land for recreation and tourism and the sites



ARCHIE LANDALS

Kazan Uplands at Wylie Lake.

JOHN RINTOUL

Peace River Parkland at Silver Valley, northwest of Spirit River.

The Peace River Parkland now has 31 square kilometres of protected area, a fraction of the 200 square kilometres needed to preserve it. Only remnants remain unploughed.

would probably have to be larger.

Special Places 2000 defines protected areas as "places that are explicitly legislated and managed to protect important natural features." Alberta has a variety of legislation for protecting natural areas, ranging from the Willmore Wilderness Act to the conditions for setting up ecological reserves.

With 20 years of experience as a parks system planner, Archie Landals has a clear perspective on the status quo. "Quite frankly, classification in Alberta is a mess. The system has grown over 60-odd years, and you used whatever legislation was expedient at the time. So we've got areas out there that are called provincial parks that by anybody's definition are not; they're purely highway waysides or recreation areas." *Special Places 2000* proposes to review the classification of existing protected areas, which may help to clarify exactly what "protected" means.

Wallis and Landals agree that Alberta already has the legislation to achieve the goals of *Special Places 2000*. "In the legislation we have the capability of having parks, recreation areas, natural areas and ecological reserves, plus the capability of classifying beyond that written into the act," says Landals. "You have more than enough categories to

People in high positions are actually seeing that we have to do something and are making a commitment.

– George Newton

GOVERNMENT OF ALBERTA

Dave Chabillon

work with, but everything that's out there isn't necessarily in the right place. We have to clean up what went before, but we're certainly not proposing any new legislation to get on with the job."

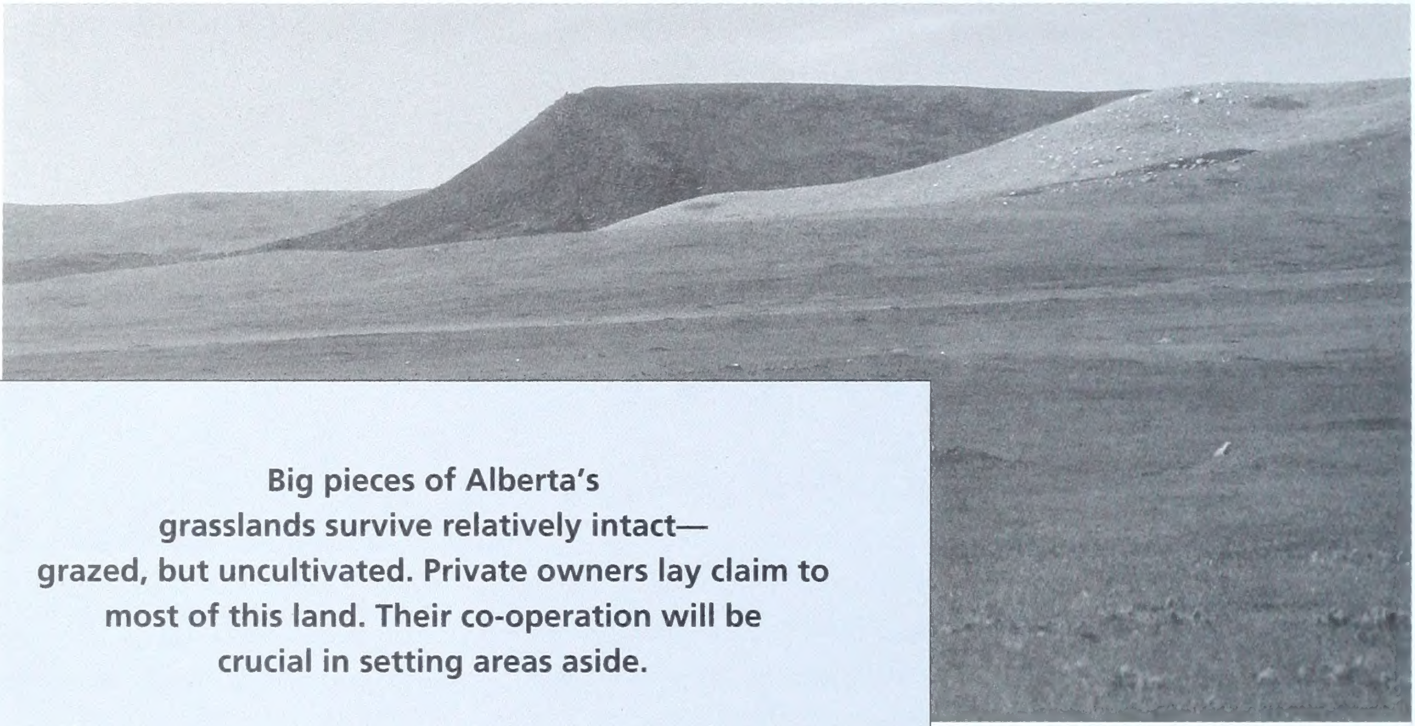
Cliff Wallis says legislation is fine, "but if the government commitment isn't there to actually protect these areas and manage them as intact systems, then no amount of legislation is going to prevent their destruction."

The planners would like commitment from outside government as well. "We would like to go back to environmental groups and corporate Alberta and look for support in managing these sites," says Dave Chabillon. "We would be looking at the stewardship program that is already in place for the natural areas and expanding it to other protected areas. We see an opportunity for Albertans to be active in managing the sites through volunteerism."

It's an idea that makes sense. Protected areas are supposed to benefit Albertans now and in the future, and along with the right to have a natural heritage should go the responsibility to take an interest in managing it.

Editor's note: For a copy of Special Places 2000, *and information on the public consultation process, call 1-800-661-5586.*

Susan Kelly is an Edmonton freelance writer.


DAVID DODGE

Grasslands National Park, Saskatchewan.

Big pieces of Alberta's grasslands survive relatively intact—grazed, but uncultivated. Private owners lay claim to most of this land. Their co-operation will be crucial in setting areas aside.

Simply Setting It Aside

Alberta and other provinces are looking at ways to simplify privately setting aside land for conservation, says Arlene Kwasniak, a lawyer with Edmonton's Environmental Law Centre.

Last year, Kwasniak helped Kathy and Locke Girvan place restrictive covenants on their lakeshore property to preserve it in perpetuity (see *Environment Views* 15(4), Spring 1993, p.4).

"It was very complicated," she says. "It's always complicated when you have to use common-law rules."

Common law is a body of non-statutory rules built up by tradition. Although common law allows property owners to restrict the uses of their land even after they sell it, the intent has traditionally been to stop certain kinds of development. To stop all development and protect a natural area, you have to meet a set of cumbersome conditions.

Says Kwasniak: "For example, you need two parcels of land—one that benefits from the restrictions and one that is restricted. Landowners who want to preserve a bit of natural habitat usually do not work in pairs."

As well, Kwasniak points out, common-law covenants "must be framed in negatives—what you can't do—rather than in positives. It would be easier if we could say 'we want to keep this land for natural habitat' instead of listing all the things it can't be to stay in a natural state."

Nova Scotia has the Conservation Easements Act, in effect since last year, which allows private people to enter into a contract with the Minister of Natural Resources or a conservation group to protect natural areas they own. "The idea is to have the preservation of an area enforced by someone else," says Kwasniak. Prince Edward Island has similar conservation easement legislation, as do most of the states in the U.S.

Kwasniak is encouraged by the interest the Alberta government has shown in simplfying private conservancy. She thinks people who want to set aside land deserve all the help they can get. They already risk losing financially by disallowing development.

"They may take a beating, but they want to do something to conserve nature."

Lynn Zwicky

Scott Rollans

A SUSTAINABLE COMMUNITY PROJECT IN CALGARY

The Push to Launch a New Way of Life

Common house with view of a storm water retention pond at Egebjerggård, Ballerup, Denmark.

Like many people today, Calgarian Ida Tjosvold faces a paradox. Although she lives in a pleasant, modern apartment building, surrounded by neighbours on all sides, she sometimes can't shake the feeling that she's all alone.

"I'm sure we all feel isolated sometimes. I certainly have a network of good friends, and I'm not isolated in that sense, but I do live alone in my apartment. My neighbours are excellent, but urban apartments aren't community. We smile at each other in the hallway and we're very pleasant, but we wouldn't go over and say, 'You want to have a cup of coffee? I had something super happen to me today,' or, 'I had a miserable day. Come in and let me tell you about it.'"

But Tjosvold, unlike most of us, is not content simply to bemoan her isolation. Instead, she joined a project to build a whole new kind of community, literally from the ground up.

The Affordable Sustainable Community (ASC) Project, masterminded by the University of Calgary's Faculty of Environmental Design, is at this point only a dream. But the tiny residential development proposed for the Inglewood district, on the banks of Calgary's Bow River, may ultimately change the way many of us live.

Scandinavian Know-How

Picture a neighbourhood where the single family dwelling has made way for closer, more integrated housing. Neighbours from all walks of life spend much of their time

Garden plots at Tusenskönan, Sweden.

together in common work and recreation spaces, and co-operate in caring for the vegetable garden and other green spaces. Cyclists and pedestrians rule the narrow, intimate streets, even though many residents still own cars. At street level, blended in with the housing, you find an assortment of small cafes and shops. The community looks after its own storm and waste water treatment, and works together to promote conservation, recycling and composting.

You might dismiss this vision as utopian, except for the fact that similar communities already exist in Europe.

David Van Vliet, ASC Project co-ordinator, travelled to Scandinavia in 1988 while working on his master's degree thesis. He studied a wide array of residential communities, ranging from 16 to 600 units in size, and was struck by the way they combined practical, social and ecological considerations. While he points out, "There's many lessons to be learned from each of them," Van Vliet describes one particular project as an example.

On the surface, "Tusenskönan" in Västerâs, Sweden, looks like a typical inner-city apartment complex: a 70-unit, U-shaped structure overlooking a partially enclosed courtyard. When he first stepped into it, however, Van Vliet sensed that the place was special. "It's just a beautiful thing: very simple and very well-conceived, and it feels good when you're in it."

In one, tidy package, Tusenkönan manages to accomplish a multitude of ecological and social goals. High insulation, good window design and heat exchange from the air and water systems combine to dramatically boost the complex's energy efficiency. The residents, through diligent recycling and composting, generate 80 per cent less waste than their neighbours. The project's few parking spaces are all underground, freeing the courtyard for other uses, including a community garden, rainwater pond and play areas.

The people who live in Tusenskönan physically shape it. "The residents are empowered to make changes in the courtyard as they see fit, even though it's a rental arrangement. They can expand the garden, they can have more trees, they can create new play areas, or take them out."

DAVID VAN VLIET

David Van Vliet and Ida Tjosvold

The high level of public involvement Van Vliet saw in the Scandinavian projects struck him. People have a stake in their community, simply because in many cases they designed it themselves.

Home Assembly

Inspired by the Scandinavian model, Van Vliet and urban design professor Dr. Bill Perks launched an effort to design a similar project for Calgary.

"We wanted to try to break the inertia that has seemed to exist for the last decade or so, in terms of environmental planning," says Van Vliet. "Industry was saying, 'We're waiting for some direction and guidance from federal and municipal government,' and the municipality was saying, 'Geez, isn't it up to the private sector?'"

> **"My neighbours are excellent, but urban apartments aren't community. We smile at each other in the hallway and we're very pleasant, but we wouldn't go over and say, 'You want to have a cup of coffee?'"**
>
> *– Ida Tjosvold*

Looking to break the gridlock, Van Vliet and Perks brought together a forum of experts from the City of Calgary and the housing industry. The ASC Project was born.

Three years later, however, it still exists only on paper. The Inglewood site is far from finalized and the design asks for a lot of rule-bending. City planners would have to stretch countless codes and regulations to accommodate the scheme. Developers, a notoriously conservative lot, would have to sink money into a radical and potentially risky venture. Houseseekers would have to abandon their suburban preconceptions and commit themselves to a completely different lifestyle.

Yet, despite the delays and hurdles, the project remains very much alive. Ida Tjosvold and her fellow society members have begun to hammer out the physical details of the project. At the same time, despite their lingering reservations, more planners and developers have come to recognize the project's potential value.

"If they were able to get this project built, or even a variation of it, and we could see what it could represent, I think it would be a

The project needs to be built. “People could look at the results and say, ‘Here’s another way of thinking, or another way to do things.’”

– Greg Brown

Greg Brown

tremendous benefit for everyone,” says Greg Brown, who represented the Canadian Institute of Planners on the ASC advisory panel. “People could look at the results and say, ‘Here’s another way of thinking, or another way to do things.’ As it is now, they’re making various people think about the concept, which in itself is positive.”

Perks is determined to see the job through. “It’s a long and complicated process, but we won’t get any change in the Canadian context until we can build demonstration projects. We need a partnership of senior government, municipality and industry to build a few of these to demonstrate, test and monitor the results.”

Impossible Price?

Not everyone shares the enthusiasm of Perks and Van Vliet for Canadian trial of the Scandinavian model.

“There’s a standoff among the municipality, the regulatory people and the industry,” observes Perks. “The industry says, ‘We will build whatever the consumer wants.’ The only problem with that is that the consumer doesn’t have any images of ‘the possible.’ Their only frame of reference is what they see already. We don’t have residential projects conceived around sustainability.”

DAVID VAN VLIET

Another Scandanavian example—Solbyn eco-village, Sweden.

At the same time, says Perks, people in the housing industry see city regulators as an insurmountable obstacle.

“They’ll say ‘Look, we have tried to get innovative projects going, but we get a hell of a lot of resistance from the municipality about changing the standards of development and the codes. It costs us a hell of a lot, because there are big long delays in getting these changes through the system.’”

Finally, Perks describes a third element in the standoff. “The politicians are very sensitive to their electorate out there, and they’re not sure that community associations will accept a different form of urban development. A more sustainable community means more intensive land use, it means tighter groupings of housing, it means mixed use of housing and it means more preservation of open space and natural ecological systems, which adds maintenance costs either to the community or to the city.”

That kind of widespread resistance would doom most projects. But, says Van Vliet, “None of this is unusual. It’s certainly happened in other places, in terms of having to overcome some of these barriers before things can move forward.”

The first barrier Perks identifies, the housing industry, currently enjoys a booming market in Calgary. With houses selling as quickly as they can be built, developers might well see the ASC project as an unnecessary risk.

Says Greg Brown, “As a planner who is out there designing the subdivisions and developments that people are buying today, my biggest concern is, is there a market? Are there enough people willing to invest their dollars to live in this community?

“People are extremely conservative when they buy their houses. One of the real driving forces is not only ‘Does it satisfy my needs’ but ‘Am I going to be able to sell it?’ When people go buy a car they say, ‘This is going to serve my needs for the next six years, it looks fun, I love the colour, so I’m going to buy it.’ When people buy a house, they say, ‘I’m going to leave the walls white for the rest of time, I’m not going to make it too exciting or do anything really radical with this house, because I’m going to have to sell it 15 years from now if I decide to move.’”

Although they’re named as Perks’ second barrier, Calgary’s city administrators appear ready to give the ASC project at least some regulatory leeway.

“In my mind, the City of Calgary is willing to look at anything, as long as it seems reasonable,” says Owen Tobert of the City’s Urban Development Division. “Our job isn’t to make sure that they make a subdivision just like any other subdivision.”

Tobert even sees some distinct advantages to the project. For instance, by taking responsibility for such things as waste water treatment and storm water management, ASC re-

Find Your Spot on the Lifeboat

The best companion on a lifeboat is someone who can navigate—or else someone who has their pockets stuffed with chocolate bars.

How well do you know your way around environmental issues? Test yourself against the experts.

1. What is the largest component of household waste?

a. grass clippings and other yard waste
b. paper
c. kitchen waste
d. plastic

2. Carbon dioxide, from burning fossil fuels, is a greenhouse gas and a major contributor to the earth's rising temperature. Where do most of Alberta's carbon dioxide emissions come from?

a. transportation
b. electrical generation
c. fossil fuel production
d. commercial and residential heating

3. The Earth Summit in Rio de Janiero last June identified poverty in developing countries as a major threat to global environmental security. In Rio, Canada and most of the rest of the developed world renewed an old promise to spend 0.7 per cent of GNP on development assistance. True or false: Canada has achieved that target since the Rio Summit.

4. CFCs are thinning the earth's protective ozone layer. We can expect more skin cancer and cataracts as a result, and can only guess at the damage to ecosystems. What is the major source of CFC emissions in Canada?

a. aerosal spray cans
b. manufacture of styrofoam
c. vehicle air conditioners
d. household and commercial refrigerators

5. The burrowing owl is one of Alberta's 11 endangered species. Unlike all but one of the other 11, its population continues to decline. What are the reasons?

a. loss of its prairie habitat
b. problems on its wintering range
c. exposure to pesticides
d. competition from introduced species

6. Your compost isn't working. Six months after you start, you can still sort the grapefruit rinds and potato peelings from the leaves. What's probably wrong?

a. you haven't got the right equipment
b. the compost is too dry
c. you're not turning the compost enough
d. you're not putting in the right kind of waste
e. all of the above

7. Under its draft policy *Special Places 2000*, the Alberta government proposes to protect a representative sample of Alberta's 19 natural regions. What region will be difficult to adequately protect because only fragments remain in a natural state?

a. the Kazan Upland of the Canadian Shield Region
b. the Foothills Fescue of the southern Grasslands Region
c. the Peace River Parkland of the Parkland Region
d. the alpine segments of the Rocky Mountain Region

8. What is the largest energy user in the typical Canadian household?

a. the car
b. home heating
c. electrical appliances
d. water heating

9. There are seven pulp mills in Alberta's boreal forest with rights to log an area over twice the size of New Brunswick. Grande Alberta Paper proposes to build another pulp mill. For what aspect of pulp mill development is public review not required by law?

a. emissions control technology
b. economic viability
c. forestry and logging practices
d. location

10. Agriculture employs more people in Alberta than either forestry or the energy industry. About how much money do Alberta's farmers lose each year because of soil degradation?

a. $100 million
b. $200 million
c. $300 million
d. $400 million

Answers:

1 – If you chose a or c, give yourself a point. 1992 statistics for Edmonton say household garbage is about 25 per cent yard waste, 25 per cent food waste, 22 per cent paper, 12 per cent plastic, five per cent cardboard and 11 per cent "other." Not all of this goes to the landfill. In Edmonton, for example, the Blue Box takes plastics and cardboard. Cut your contribution to the dump by composting your kitchen and yard waste, and by taking recyclables to depots throughout urban centres or paper to recycling businesses such as Paper Chase Recycling in Edmonton and Green Step Recycling in Calgary.

2 – b. In 1990, electrical generation accounted for about 31 per cent of Alberta's total carbon dioxide emissions because coal-fired plants produce most of Alberta's power. Fossil fuel production—such as oil and gas processing—is the next biggest carbon dioxide emitter at about 28 per cent. The transportation sector is about 17 per cent of the total and commercial and residential heating is around 10 per cent.

3 – False. Canada's contribution is 0.45 per cent of GNP and in real dollars it's going down. The federal government cut development assistance by 10 per cent this year to help control the deficit. The cut does not affect funds for famine relief, but it has stripped down and eliminated many development projects that go beyond this bare minimum, especially in the poorest African nations such as Tanzania and Uganda.

4 – c. Leaks from vehicle air conditioners are the biggest source. Under the 1987 Montreal Protocol, Canada has banned the use of CFCs in spray cans and the manufacture of styrofoam. CFCs are still used in refrigerators, but since they are stationary, they leak less. CFC substitutes are on the way for air conditioners and refrigerators. In the meantime, take it easy over those bumps.

5 – a, b and c and there may be other reasons too. We don't know the whole story of the decline of the burrowing owl. We're not even sure where they winter, but it's probably Mexico. We do know that fewer birds come back in the spring than left in the fall. We also know that we've ploughed a lot of the owls' gopher-riddled prairie habitat here in Alberta; they use gopher holes for nesting sites. Finally, we know that in areas sprayed with the grasshopper insecticide, carbofuran, the owls produce fewer young or disappear altogether.

6 – b and c. The most common problem is not enough water and not enough work. The centre of the compost should be damp, so you should water it during dry weather. Turning the compost keeps it aerated, which helps to control odour and speeds up a working compost. You don't need special equipment—a hole in the garden is fine. Any kind of vegetable matter is eligible, but avoid weeds gone to seed and grind up the tough stuff such as corn cobs.

7 – c. The Peace River Parkland is almost all cultivated. Sixteen per cent of the target 200 square kilometres are now protected, and it will be hard to piece together more. By contrast, while none of the Kazan Upland is now protected, it will be easy to achieve all of the 360-square-kilometre target. The alpine areas of the Rockies are already over the protection target because of mountain national parks. There are still large tracts of the Grasslands region in excellent condition. The obstacle to meeting the targets there is that most is privately owned.

8 – b. *The State of Canada's Environment 1991* says that home heating accounts for 41 per cent of total household energy demand. If you guessed the car, you're close—it uses 38 per cent. Appliances and water heating both use about 10 per cent.

9 – c. There is no law requiring public review of forestry management and logging practices. Since the creation of the Natural Resources Conservation Board in 1990, pulp mills themselves are the subject of public hearings, but not their timber leases or their forestry operations. It is, however, the policy of the government that companies seek public input when developing forestry management plans.

10 – d. Farmers lose over $400 million a year to wind and water erosion, loss of organic matter and salinization. To improve the productivity of their land, they spend $250 to $300 million a year on fertilizers.

How Did You Do?

Navigators
(8 to 10 right answers)
Congratulations! You win the compass. Now if we only had a map....

Rowers
(3 to 7 right answers)
Don't rock the boat, and stroke! Stroke!

Baggage
(0 to 2 right answers)
Hope you don't weigh too much. Got any chocolate bars?

Thanks for expert help to: Zan Figol, Waste Management, City of Edmonton; Don Wharton, Environmental Affairs Branch, Alberta Department of Energy; Sharon Morin, CIDA; Art Stelzig, Industrial Programs Branch, Environment Canada; Steve Brechtal, Fish and Wildlife Services, Alberta Environmental Protection; Allan Yee, Master Composter/Recycler Program, City of Edmonton; Archie Landals, Alberta Parks Service; Arlene Kwasniak, Environmental Law Centre; and Tom Goddard, Conservation and Development Branch, Alberta Agriculture.

moves that burden from the city.

"Everybody here at the City of Calgary is fully aware that we've got finite financial capabilities. If subdivision development is going to continue the way it has in the past, we're going to reach a point where we won't be able to afford new developments. We're rapidly reaching that point already."

Perks and Van Vliet did their best to overcome the third, political barrier when they made up their initial advisory panel. The panel included a representative from the mayor's office, a city alderman and Bob Lang, director of Federation of Calgary Communities. As a result of their involvement, none seem particularly alarmed about ASC. Says Lang, "I don't see any real problems with the project."

Even so, Van Vliet can't seem to find the kind of political help he saw in Scandinavia, where politicians eagerly embrace social experimentation.

"The attitude there is to see how things work in practice as fast as possible in order to learn from it. The fundamental difference is that municipal agents see themselves as playing a role for change and having influence on the private sector."

Instead, he finds himself caught in a frustrating political cycle. "Certain people say, 'This can only come from strong political support,' and certain politicians say, 'No, this can only come from support from the planning bureaucracy,' and the planning bureaucracy says, 'The only way this can happen is if the commissioners fully support it.'"

Sold

If they lack a strong friend at city hall, however, Van Vliet and Perks have some determined allies in Ida Tjosvold and her colleagues. The Sustainable Community Housing Society sprang into existence after a local CBC radio interview with Van Vliet and Perks where they asked ordinary Calgarians to help design the project. During the next 36 hours, over 100 calls flooded in.

Of the 24 people chosen for the group, many, including Tjosvold, hope to ultimately become residents of the project.

"I like the sense of stewardship, of 'living lightly on the earth' ,of being environmentally responsible," says Tjosvold.

She adds: "I look at it in two ways. Partly I look at it as a consumer, in that I would love to live there. On the other hand, I'm also a sociologist, and it makes awfully good sociological sense, in terms of people's loneliness and the need for community."

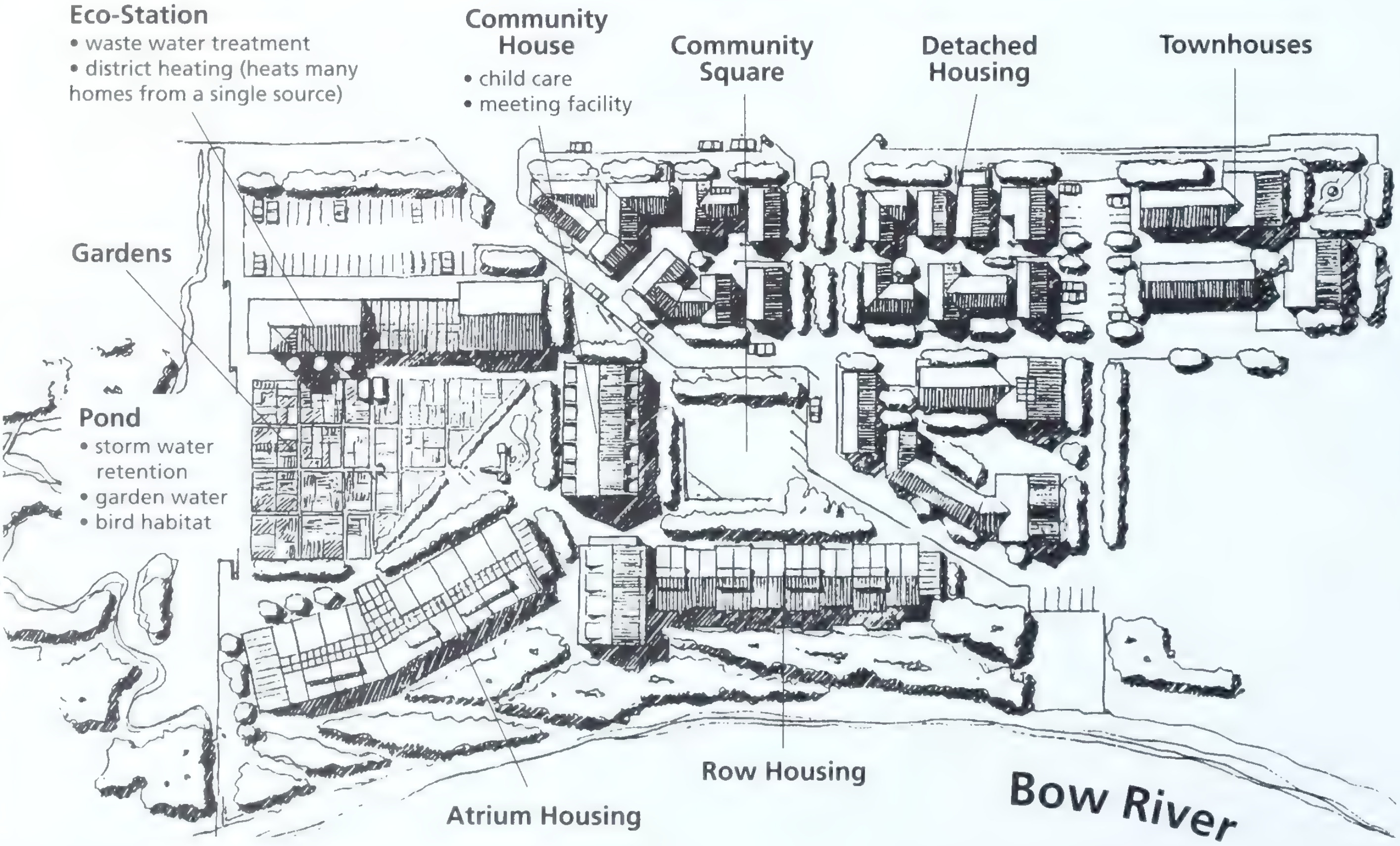
It makes good sense to project engineering consultant Finn Spanggaard too. "We've been trying to increase the density of the housing units, so you'll find people living closer together but at the same time with more common areas. That will cut down on servicing costs," says Spanggaard. It will also cut down on alienation: "Sometimes if you're closer in with other people you're almost forced to talk to them. I think in today's communities people are very distant toward each other."

For the time being, Calgarians will have to find more conventional ways of bridging the distance among them. The three-hectare plot at the edge of the Bow won't take its new shape for at least a few years.

But Van Vliet is convinced that the long wait will eventually be rewarded. "Some of the professionals involved say that they have never seen something being discussed for this long, and engaging this many people, without eventually proceeding. I'm confident that something will happen."

Scott Rollans is an Edmonton writer.

Plan of the Affordable Sustainable Community Project



AFFORDABLE SUSTAINABLE COMMUNITY PROJECT

Alice Major

THE TECHNOLOGICAL FIX

Can Technology Bail Us Out?

Technology gave us air conditioning—and the ozone hole. It gave us cars and coal-fired power plants—and global warming.

Can the human ingenuity that got us into environmental trouble get us back out? Once we've identified a problem, especially one caused by our own technology, surely we can fix it.

Or maybe the "fix" is more sinister—more like the addict's craving for the very substance that is ruining her life.

Good or bad, however, we do not have the choice of throwing technology away. As Professor Eric Higgs says, it is the water we swim in and the air we breathe.

Malcolm McDonald

Eric Higgs

UNIVERSITY OF ALBERTA PHOTO SERVICES

"It's just what we are...It's not this or that artifact," says Higgs, who has done a lot of thinking on the subject of technology's relationship to society and the environment. He teaches at the University of Alberta, and is researching the philosophical underpinnings of ecological restoration.

Human beings don't have much that isn't technology. Maps, baths and pantyhose are all the products of the human tool-making tendency. All of them have environmental impacts.

When it comes to agriculture, for instance, it's easy to think of million-dollar combines and genetically engineered seeds as high-tech. However, poking a hole in soil with a sharp stick and dropping a kernel in—that's technology, too.

If humanity and technology are inseparable, the question is: how can and should this techno-human complex relate to nature?

From the perspective of Richard Johnson and Malcolm McDonald, who research and apply technologies, human inventiveness can indeed benefit the environment, both by cleaning up damage inherited from the past and by preventing damage in the future. They talk about technologies that look more carefully at nature itself and imitate its checks and balances.

Johnson works in bioremediation at the Alberta Environmental Centre in Vegreville. Bioremediation is a technology to clean up contaminated environments using naturally occurring organisms. These have surprising capabilities when it comes to breaking down even highly toxic compounds.

Johnson sees a lot of interest in variations on the bioremediation theme. He estimates up to 50 Alberta companies are working in related areas.

The potential attraction is obvious, he says. It's estimated that cleaning up contaminated soils at U.S. military sites alone will cost $1.7 trillion. Here in Alberta, environmental cleanup is a big enough task.

"Every major oil company has sites," he says, adding that there are also significant problems associated with "orphan" wells that have been abandoned by their owners.

The beauty of bioremediation is that it draws on the immensely diverse appetites of bacteria and fungi that occur naturally in soil. They break molecular bonds, turning one compound into another—which in turn becomes an energy source for other micro-organisms. The byproducts of their digestion are essentially the same things that are released by any compost heap.

Malcolm McDonald, manager of research and technologies for TransAlta Utilities Corp., suggests this kind of thinking could be applied more broadly. He says a number of thinkers are advocating a concept known as "industrial ecology."

Industrial ecology involves integrating industries so that they behave more like the natural food chain, with one process using the byproducts of another. For instance, an industrial complex could be set up so the byproducts of burning coal—such as carbon dioxide and sulphur—could be used in turn as the feedstock for other industries.

McDonald says industry now operates in a way that "draws a circle around a plant and says 'this is the optimum way to behave.'" By contrast, the thinking of industrial ecology would expand the circle to manage resources for a chain of plants. An oil refinery, for example, might enrich its residue with a little premium grade to make it more useful to the next "organism" down the line.

McDonald believes it is indeed possible for human ingenuity to put right some environmental mistakes.

"Maybe I'm biased, but I feel technology can solve a lot of our problems," he says.

"Can Do" Versus "Should Do"

Technology can do so much, but what should it do? For Eric Higgs, the answer lies in sorting out means and ends—how we do something from what we're doing and why.

Technical proficiency, the "how," is usually uppermost in our minds. This is partly due to "reverse adaptation," Higgs says, where we match our ends to fit the available technology. Reverse adaptation is a scholarly term for an old adage: to someone with a hammer, every problem looks like a nail.

Our love of the "how" is also due to an overwhelming trend in western society to consider everything a product, a commodity.

For instance, the field of ecological restoration is growing "by leaps and bounds," says Higgs, partly because we're running out of pristine wilderness. Across North America, technicians are working to bring different kinds of ecologies back to health.

Like all tools, however, these techniques for restoring nature have an ambiguous relationship with both reality and morality.

As an example, Higgs cites the situation where the Hartz Mountain Co. wanted to build on a salt marsh in New Jersey. When environmentalists objected, the company responded by offering to build a better, bigger salt marsh to replace it.

"What does 'better' mean in that context?" asks Higgs. He contrasts this endeavour with a project in Chicago, where abandoned lots in slum areas are being turned into shortgrass prairies.

"These are not 'perfect' prairies," he says. "But how do you measure their worth?" The Chicago restoration may engage children and give them an understanding of natural processes. That may be more important than a restoration that could fool biologists. In this case, Higgs would argue, the creative process is more valuable than the end product.

The view of the world as product or measurable commodity is endemic to our society, says another U of A philosopher. Professor Bob Burch describes our contemporary understanding of the world as: "If it can't be calculated, manipulated or controlled, it can't be real."

Even those who oppose technology, says Burch, are generally caught in the same mental framework. Technophiles and technophobes agree that the effects of technology can be measured. They disagree on the appropriate yardsticks, but they use yardsticks with equal authority.

For example, Burch points to the argument that says to preserve the environment, we'll have to sacrifice our standard of living.

"If there were a transformation in thinking, the criteria for what constitutes a good life would be different," he says.

Our challenge as human beings is not to

> **Maybe I'm biased, but I feel technology can solve a lot of our problems.**
>
> *– Malcolm McDonald*

Technology Mimics Mother Nature

Bioremediation is a high-tech word for souping up a low-tech process. Contaminants such as oil will break down in the environment eventually, with the activity of the trillions of micro-organisms found in every gram of soil. Researchers are looking for ways to make this process happen more quickly and completely.

"We've just completed the first year of bioremediation on the first type of waste we're researching," says Richard Johnson, who heads the bioremediation program at the Alberta Environmental Centre in Vegreville. "We've eliminated about 40 per cent of the original oil content, and the microbial activity is still continuing."

The technical committee assembled to oversee the project decided to include three different types of waste that present typical cleanup problems in Alberta's industrial environment. The first is soil contaminated with an oil-brine mixture.

Vegreville research staff developed a clever, rototiller-like device to break contaminated soil into pellets of the right size.

"The size of the aggregate is important," says Johnson. "It controls whether the micro-organisms have access to the contaminant."

Researchers around the continent are investigating the use of specific organisms to attack specific kinds of contaminated material. However, the Vegreville project is not adding anything that isn't already in the soil.

"The amount of microbial activity in soil is stupendously high," says Johnson, adding that he's "a bit leery of superbugs."

Results have been encouraging. The contaminants continued to break down, even through the winter. Johnson hopes that the final result could be soil where only 10 to 20 per cent of the contaminating hydrocarbons are left—and even that residue would be something more closely resembling natural organic matter.

The technology appears to offer a cost-effective way of cleaning up contaminated soil. The main limitation, says Johnson, is that it's not a fast process. "For some contaminants, speed is not a problem."

For substances where speed does count, Johnson and his colleagues are investigating other, faster ways of cleaning up. The Solvent Extraction Soil Remediation (SESR) program, for example, is a joint effort with the National Research Council.

In tests, SESR techniques can remove between 95 and 99 per cent of contaminants from soil in a matter of minutes. It is particularly attractive since, unlike other chemical techniques for removing contaminants, it leaves behind aggregated soil. In other words, the soil's organic content is left intact.

SESR does sterilize the micro-organisms in treated soil. However, says Johnson, that can be remedied by adding a small quantity of regular topsoil.

"We're studying just how fast they are re-established," he says. "We think it is very rapid."

Alice Major

decide whether technology is good or bad, but to think critically about why we frame the question the way we do.

Getting Out of the Box

If we're inseparable from technology, and if our view of the world is conditioned by the tools we use, how can we get out of the box? Is it possible to control the technology we use without being controlled by it in turn?

While we have to look critically at how we think, Burch doesn't believe that society can or should throw out the world view that conditions us. The idea that somehow we can adopt a totally different world view is not really workable, he says, and he worries about "a tendency in some quarters to devalue completely the framework in which we work."

Burch thinks we'll feel the limits of technophilia as our pursuit of technical control comes up against the limits of nature. As the mishaps and disasters pile up—and as we realize more and more that our tools don't necessarily bring us happiness—the framework of our mental box will have to give way.

Perhaps society can change its thinking processes. But it seems clear that in a practical sense technology will continue to change our relationship with nature. Many feel those changes could be for the better.

"I believe the problem is not technology short-changing society," says Malcolm McDonald. Instead, he feels the problem lies in the failure of another framework—the economic one.

continued on page 18

> **The way we understand the world: "If it can't be calculated, manipulated or controlled, it can't be real."**
>
> *– Bob Burch*

If it can't be measured, is it real?

Small Significant Steps to Cleaner Air

Technology isn't always something big, shiny and radically new. A lot of the time, it's related to small, incremental improvements.

Take, for instance, a system developed to lower nitrogen-oxide (NOx) emissions from coal-fired generation stations. Almost all of Alberta's electricity comes from coal, so a system that can reduce NOx by up to 18 per cent for very little cost offers significant environmental benefits.

NOx is a precursor of acid rain and smog. Differences in NOx emissions are not related to differences in the coal burned, says Malcolm McDonald, TransAlta Utilities' manager of research and technology. "NOx is a function of how the boilers are operated," he says.

This means the operators of a generating plant can control emissions to a significant degree. The system developed by TransAlta in conjunction with the Alberta Research Council is aimed at helping plant operators do just that.

NOxSMART is a computer "expert system." It monitors conditions in the plant's boiler continuously and gives the human attendants advice on what to do to keep NOx emissions to a minimum.

"It helps the operators learn the best way to operate," says McDonald.

Alice Major

OTTILIE SANDERSON

Bob Burch

Can we control technology without being controlled by it in turn?

Environmentally friendly technologies can be dropped because they are not cost-effective, he says. This is largely because industry has no way to incorporate environmental costs into the costs of doing business. The real costs of using air, water and the earth's capacity to absorb waste don't find their way onto the balance sheet.

Richard Johnson also feels that one of the major problems limiting environmental improvement lies in the marriage of technology and economics. One of the biggest challenges in the post-industrial world, he says, will be to move good ideas from the research labs into commercial use.

He remains hopeful about technology's potential, although he doesn't expect one wonder tool to solve all our problems.

"There will be a whole bunch of technologies" for cleaning up the environment, he says. But perhaps the most important tools we use will be those that help us cut back on the amount of mess we make.

"We have to turn off the faucet," he says.

Alice Major is a freelance writer, novelist and poet living in Edmonton.

They Keep Going and Going

Wind turbines generate electricity without producing greenhouse gases or nuclear waste. They are examples of technologies that "turn off the faucet" of environmental trouble before it starts to drip.

The Darrius-type vertical axis wind turbines, pictured below, will be part of a ten-turbine power plant near Pincher Creek. The National Research Council developed the vertical-axis design in the early 1980s. Usually this type of turbine has two blades. Reseachers hope the four-blade design will turn at lower wind speeds.

The plant, by Adecon Alberta Inc., will sell the 1.5 megawatts of electricity it produces to TransAlta Utilities. Adecon expects the plant to operate for more than 20 years.

The project is one of five experiments with wind-generated electricity under the provincial government's Southwest Alberta Renewable Energy Initiative.

Lynn Zwicky

Debby Waldman

INDICATORS

Charting a Course for Sustainable Development

Economists have their indices, sociologists their polls, but when it comes to measuring the state of the environment, the most relied-upon gauge seems to be disaster.

"Look at the Exxon Valdez, the demise of the rain forest, the Alberta foothills, the state of farms in Saskatchewan, the demise of the North Atlantic cod fishery—it goes on and on," says Tony Hodge, former president of Friends of the Earth Canada and now serving on the National Round Table on the Environment and the Economy. "We're doing something wrong. We're destroying the resources that we depend on for our survival."

Reaching that conclusion is fairly simple. What's more difficult, and more important, is doing something right. And what's right, according to *Our Common Future*, the bible of sustainable development, is finding a way to meet our needs without compromising the ability of future generations to meet theirs.

The challenge, as we grope our way toward a sustainable future, is to know whether we're going in the right direction.

Signs of the Times

Following the lead of economists, who use such indices as inflation and debt to measure the economy's health, organizations working for sustainable development are trying to nail down some useful indicators of their own. They are looking at everything from levels of crime and education to the quality of air and water in a given community.

Sustainable development indicators are not just about environmental worries. Although it is environmental crisis that has caught the public's attention, the root cause of that crisis is often social and economic.

Sustainable development indicators are also more than a collection of statistics. "The difference between an indicator and a statistic is that an indicator tells a story," says Doug Burch of the Calgary Round Table for the Quality of Life.

Statistics look at issues in isolation, but indicators tie them together. They take into consideration the interaction between economic, environmental and social factors.

ARE WE THERE YET?

For example, a statistic on the average price of a can of pop reflects demand and production costs. An indicator would inevitably show a different number because it would take into account the social, economic and environmental costs of producing pop—everything from factory working conditions to the depletion of the world supply of aluminum.

"Sustainability indicators, in my view, capture the various perspectives of environment, economy and social well-being, and the essential integration of those three components," says Lee Doney, executive director of the British Columbia Round Table on the Environment and the Economy. "We've tended, in the past, to look at the three in isolation.

"We have an economy that is, we hope, there to benefit our social well-being. Both those are hinged on the environment. If the environment isn't sustained, we don't survive. If they're not interlinked, you can't make integrated decisions that work. That's the hope for these indicators—to see how we're doing in each of these factors."

Going in Circles

Tony Hodge is chairman of the National Round Table's task force on reporting on sustainability. He worries that we don't have enough information to define sustainable development indicators.

We have data on the well-being of people and on the well-being of ecosystems, he says, but we don't have nearly enough on what

**The challenge,
as we grope our way toward a sustainable future,
is to know whether we're going in
the right direction.**

links them—human activity. Conventional economic data, in his opinion, fall short. They don't say anything about subsistence farming, for instance, or illegal activity such as the international drug trade.

And as important as indicators are, rushing to create them isn't going to move us any closer to sustainable development. "It's like, you and your buddy sit down and say, 'we need a diesel locomotive,' and then you spend four weeks arguing about the design of the screwdriver you need to build the locomotive. You don't even know what kind of locomotive you want to build. You don't even know what kind of screwdriver you need.

"We need to look at the diesel engine before the screwdriver."

Rushing to create indicators isn't going to move us any closer to sustainable development.

Looking Ahead

But the pressure to create something—to get somewhere—is overwhelming. As Maurice Strong noted at the Rio Earth Summit last June, the world has not changed much since its environmental awakening 20 years ago and we don't have another 20 years to get it right.

In Canada, the national and provincial round tables on environment and economy, and other local organizations such as the Calgary Round Table on the Quality of Life, are working on indicators.

Alberta's Round Table, formed in 1990, is made up of 24 people representing a wide range of interests including business and industry, academia, agriculture and the environment. The idea of round tables comes from the Brundtland Commission, author of *Our Common Future*, which called for integrated decision making on environmental and economic matters.

Indicators are built right into the Alberta Round Table's mission: to consult with the public about what sustainable development means for communities, to develop a vision statement that outlines sustainable development goals and to create indicators that will enable communities to achieve the goals.

"There has to be public participation in the process," says Doug Burch, of the Calgary Round Table. "It's public ownership—it makes the task hard, but if I don't have the people in Calgary feeling that they have a sense of ownership in this process, what have I achieved?"

To come up with its list of indicators, the Alberta Round Table consulted special interest groups, scientists and experts. The result was a list of more than 800 suggestions.

Tony Hodge does not question the need for public input and regional perspective. But he does wonder how public brain-storming will result in good indicators. "The ecosystem doesn't function in the same time dimension as human beings. If you're going to develop a system of reporting on sustainability, you've got to be prepared for a horizon of time and space that's very different from our own."

Part of that involves being "much more anticipatory in our thinking," he says. "If you go out and survey 1,000 people and get 800 responses, what you're going to get is people's concerns today, which is good; that's what its strength is. But it's not going to give you the kind of anticipatory perspective the Brundtland Commission called for."

Aniko Szojka of Alberta Environmental Protection helped the Alberta Round Table whittle its 800 suggestions down to a short list of 60. "We wanted meaningful indicators," she explains. Indicators have to monitor and inspire change. They also have to reflect the concerns of interest groups.

Equally important, they have to be measurable in a reasonable sense. "We didn't want to have to spend hundreds of thousands of dollars to get the data," Szojka says. "(The indicator) had to be understandable. If we didn't understand what it was trying to get at, we refined it or dropped it."

Those that were dropped include "political will" (too vague) and frequency of sustainable development messages in the popular media (too difficult to measure). Those kept include air quality data, the number of biogeographic regions with adequate protection, average commuting distance to work and percentage of postsecondary graduates employed in their field of study.

Statistics already exist for many of these, but no one is yet ready to call them indicators. Brian Free of the Environment Council of Alberta, who works on indicators for the Alberta Round Table, says the indicators will need to be refined over time."It's not perfect," he says. "I don't think the Round Table would even say its vision is perfect."

The three-year mandate of the Alberta Round Table was up at the end of May. Free says the current Round Table hopes that a similar body will be continued with new people involved. "They are hoping that if a sec-

GOVERNMENT OF ALBERTA

Brian Free

ond Round Table is formed, it will continue this work somehow."

Learning by Doing

The B.C. Round Table has started a group to co-ordinate work on sustainable development indicators. The group includes members of the Alberta, Ontario and National round tables, but says Lee Doney: "We've never seen indicators produced."

That hasn't stopped the B.C. Round Table from influencing government actions. When it recommended land-use planning based on principles of sustainable development, the B.C. government created a commission on resources and the environment headed by former provincial ombudsman Stephen Owen.

Lee Doney

B.C. ROUND TABLE ON ENVIRONMENT AND ECONOMY

Land-use planning debates lead to indicators.

– Lee Doney

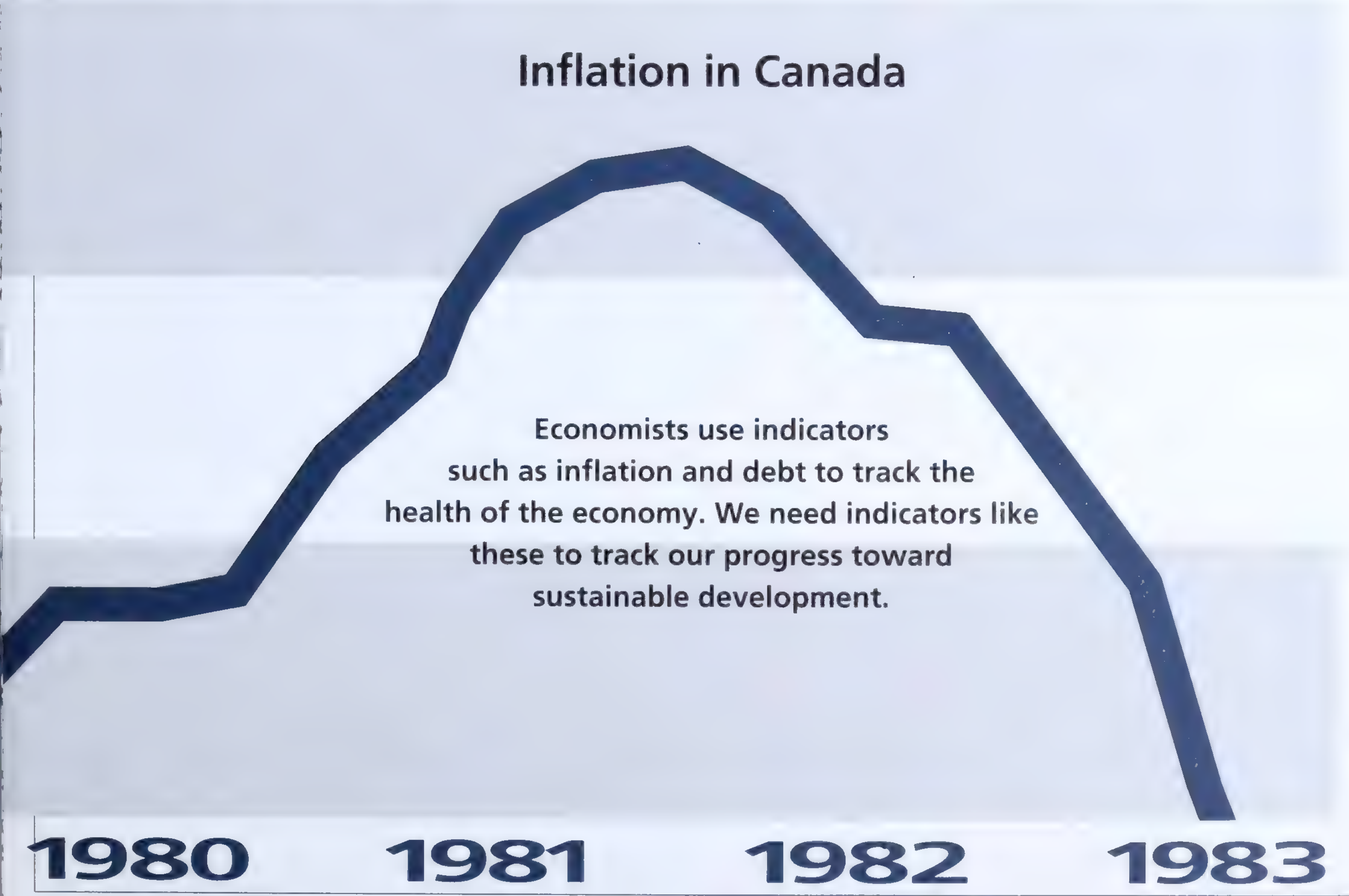
The commission is working with the government, community groups, industry representatives and other interest groups to define land-use planning systems for each of eight regions in the province. The government will make the final decisions, but Doney expects if the interest groups reach a consensus, the government will endorse it. The first land-use planning system, for Vancouver Island, is due for decision in August.

Doney is confident that sustainable development indicators will be a logical byproduct of the planning process. This is because reaching a compromise between forest development and protection will inevitably generate a lively debate and, says Doney "that leads to indicators."

As the debate thrashes itself out, lots of detail about the relationship between communities and ecosystems will emerge. A key issue of the land-use planning systems, Doney says, will be which communities can be sustained and which will be "in serious trouble" because they will become part of protected areas where forestry is not allowed.

"You have annual allowable cut but that's only one side of the coin. You don't have it married with the amount of biodiversity you need to protect. You just haven't married them together yet. This land-use process will marry them together."

Debby Waldman is a writer living in Edmonton. Lynn Zwicky did some additional reporting in this story.



Inflation in Canada

Economists use indicators such as inflation and debt to track the health of the economy. We need indicators like these to track our progress toward sustainable development.

SOURCE: PAUL ROCHE

by Cathie Bartlett

Environment Week Events

Get a complete calendar of events from your nearest Alberta Motor Association office.

Banff June 12 - Hazardous Waste Round-up

Barrhead June 5 - Community Trunk Sale

Brooks June 5 - Enviro Fair '93, Cassils Centre Mall

Calgary June 5-6 - Great Paint Exchange, Mewata Armories; June 6 - Compost Bin Building Bee, Calgary EcoCentre; June 7 - Emerald Awards, Jack Singer Concert Hall; June 8-13 - Mayor's Environmental Expo, City Hall

Crowsnest Pass June 12 - Enviro Kids Afternoon

Drumheller June 7-11 - Environmental Awareness Tours of the recycling facility, landfill and water treatment plant

Edmonton May 27-29 - Toxic Round-Up and Paint Exchange, Clarke Stadium; May 29-30, June 5-13 - EnviroFair, Edmonton Centre; June 13 - Earthwise Celebration, Rundle Park

Edson June 6 - Family Picnic, Earthcare on Robb Road

Fort Macleod June 5 - Kids' Environmental Matinee, Empress Theatre; June 13 - Grand Opening of Enviro Station

Fort McMurray June 5 - Opening of Waterways Urban Park; June 12 - Hazardous Waste Round-Up, downtown firehall; June 13 - Green Sunday, Heritage Park

Fort Saskatchewan June 5 - Toxic Round-Up, city operation yards

Grande Prairie June 5 - Community Truck Sale, Muskoseepi Park; June 12 - Toxic Round-Up and Paint Exchange, City Service Centre

Hastings Lake June 13 - Environmental Arts Festival, Hastings Lake Community Hall

Hinton June 5-13 - Tree planting, Weldwood grounds

Jasper June 5 - Cardboard Recycling Depot Grand Opening

Lac La Biche June 5 - Main Street Garage/Sidewalk Sale

Lacombe June 12 - Family Enviro Fun Fair, near Cranna Lake

Lethbridge June 6 - Environmental Awareness Fair, Japanese Gardens

Medicine Hat June 5 - Toxic Round-Up, city landfill; June 9 - Waterless Wednesday

Morinville June 5 - Environment Week Celebration, Fish and Game grounds

Peace River June 11-12 - Enviro Swap/Toxic Waste Round-Up, town yard; June 12 - Enviro Fair, Riverfront Park

Red Deer June 11-12 - Energy exhibitions, Parkland Mall; June 13 - Green is Great Day, Kerrywood Nature Centre

Rimbey June 5-13 - Community tree planting

Rocky Mountain House June 12 - Trail Walk/Bicycle Event, new Crimson Lake trail

Slave Lake June 5 - Picnic in the Park, Schurter Park

St. Albert June 12 - Shades of Green Festival, Lions' Park

Vegreville June 9-11 - Environmental Business Trade Show

Vermilion June 5 - Community Swap

Keeping the Water Down on the Farm in Provost

As spring passes into summer, water conservation becomes a prime concern for farmers.

A handful of livestock producers in the Provost area are part of a program to demonstrate water conservation alternatives.

The two-year project will work with five or six dugouts in the Provost, Wainwright, Hardisty and Consort areas, says program manager Agnes Whiting from the East Central Alberta Forage Association.

The program will involve fencing off the dugouts from livestock to prevent contamination of the water supply from animal waste and bank erosion caused by trampling. For some dugouts, livestock will have access to the water on specially built gravel ramps, according to Whiting.

At others, pumps will supply water to troughs and livestock will not get near the dugouts. The project will demonstrate different types of pumps, including a livestock-activated pump and a wind-powered pump in conjunction with an elevated reservoir watering system.

The program will also demonstrate "water harvesting" as a method of increasing water supply. Embankments, snowfences and shelterbelts (trees) adjacent to the dugouts are different ways to trap snow and direct snowmelt into the dugout.

The project will promote control of erosion from runoff by planting perennial forages.

"We hope to have the sites ready by June," Whiting says.

Local producers within the community will be able to tour the sites. The East Central Alberta Forage Association will co-ordinate field tours and newsletter releases to promote the project. All sites will have signposts and information boxes explaining the project. The association will discuss the project and data collected from the sites at meetings throughout the district.

Besides demonstrating water conservation alternatives to livestock producers, the program aims to show producers that environmentally sustainable practices are profitable by providing first-hand information on the economic benefits of water conservation.

Promotion of the use of renewable energy sources in livestock watering systems is another objective of the program.

The program grew out of local producers' concerns about sustaining water sources.

"The water table has slowly dropped due to the lack of precipitation in the past few years," says a program description. "Both water quantity and quality have become difficult to maintain. Producers are also becoming more aware that sustainable agricultural practices, including water conservation, are essential for the future."

The Alberta Ecotrust Fund and the Canada-Alberta Environmentally Sustainable Agriculture Agreement funded the project. Co-operating livestock producers and the local Agricultural Service Board will donate labour and equipment.

The mission of the East Central Alberta Forage Association, formed in 1979, is to try new ideas and to demonstrate new technology available to farmers and ranchers. Efficient use of resources—the basis for sustainable agriculture—has always been a central goal of the association.

Enraptured With Raptors

The Alberta Society for Injured Birds of Prey has more members all the time—proof of the fascination of raptors.

The Ardrossan-based society had a handful of volunteers five years ago and now has more than 400 members, says Karl Grantmyre, the society's executive director.

GORDON COURT

Information booths in shopping malls around Edmonton and visits by Karl to schools have increased public awareness, and general concern over dropping wildlife numbers has no doubt contributed to interest in the society.

"Even more, I think it's just a plain fascination with birds of prey, because they are spectacular," he says.

People appreciate the chance to work with such interesting birds, he says. All kinds and all ages come out to the society's spot on the Polar Park grounds, east of Edmonton, to help look after the injured birds.

The society gives information sessions on Tuesday nights. A core group of about 20 volunteers, including lab technicians, postgraduate zoology students and microbiologists from the University of Alberta, runs the society's facilities. Other members breed mice for the birds, using donated cages and stock.

The society got its start when Karl was working at Polar Park and people brought injured birds to him. "It gradually grew from that," Karl says.

He has a permit to run the facility and is licensed under a contract through Alberta Fish and Wildlife, with whom the society has worked since 1987. John Folinsbee, biologist with Alberta Fish and Wildlife, says the Ardrossan facility is one of about eight licensed wildlife rescue facilities throughout the province.

Injured birds come to the society from the Strathcona Wilderness Centre, the John Janzen Nature Centre, the Edmonton SPCA and veterinarians. The society is an associate member of the Alberta SPCA.

The society has rescued and provided treatment for hundreds of injured and orphaned birds of prey, working with 400 birds in 1992 alone. Some of that figure includes songbirds—the Grantmyres admit they just can't turn an injured bird away.

The objective is rehabilitation—reconditioning the bird for survival in the wild. As Karl says: "You can heal. But you have to be sure you can heal properly."

Karl became a certified rehabilitator last year, and is now Alberta representative for the International Wildlife Rehabilitation Council, a group formed in the U.S. about 10 years ago.

The society offers workshops in rehabilitation that are well-attended—40 people last year and 43 this year. Participants are from a broad spectrum, united by "their love of animals," Karl says.

Likewise, the society's work is a labour of love for the Grantmyres. Karl does up to three and four school presentations a week, as well as working with the injured birds.

The society is a registered charity and is financed by private donations, although it has received grants for some special projects.

Another "R" in Aerosols

Of the four Rs—Reduce, Reuse, Recycle and Recover—aerosol cans could until now only claim the first. The green rule was: don't buy them because you can only throw them away.

Last year a plant outside Edmonton began to recycle aerosol cans from across Canada, and now the Edmonton Blue Box accepts them too. Recycle Systems Company Inc. opened the plant at Nisku last September and vice-president Mervin Domanko says he takes cans from toxic round-ups in Montreal, communities in southern Ontario, Saskatchewan and British Columbia, as well as Alberta.

Private businesses in Alberta have also sent aerosol cans to the plant, as landfill operators become more aware of possible soil and groundwater contamination if the cans leak after landfills are closed and reclaimed for other uses.

Edmonton's Blue Box program is the plant's latest source of aerosol cans. Domanko says Browning-Ferris Industries Ltd. and the Edmonton Recycling Society—the companies operating the Blue Box program—shred empty cans for reuse at Alberta Steel but now send partially filled ones to Recycle Systems' plant.

The Nisku plant crushes the aerosol cans in a totally enclosed environment. It vacuums off the toxic fluids and propellants. The plant flares the propellants—mainly propane, butane and isobutane—and ships the toxic fluids either to the Swan Hills waste treatment plant or to another Nisku company for further recovery. Alberta Steel takes the crushed metal and Superwood Western Ltd., an Edmonton firm, recycles the plastic.

Domanko says it's a popular misconception "that CFCs are going out" when the cans are recycled. But CFCs have been banned from aerosols for more than 15 years.

As of early April, 170,000 cans had been processed and over 10,000 litres of toxic fluids recovered, including paint, oven cleaners, hairspray and undercar coating.

Domanko believes the plant is the only one of its kind in Canada. When they received their licence from Alberta Environment a year ago, "we were the only ones who were handling waste stream aerosols," Domanko says. (Some paint companies recycle their own products internally, in cases such as clogged valves.)

Public reaction has been "surprise at the amount of toxic fluid that we've recovered from the cans," he says. "Everyone thought the cans would be empty or almost empty." But the average can has contained 20 per cent liquid and 30 per cent propellant. Recycle Systems has also recovered 700 barrels used in the past to transport aerosols from the Alberta Toxic Round-Ups to Swan Hills. By re-using the barrels and their vermiculite packing material, the company saved the province $24,000 to $25,000.

Domanko and his partner, Jack Krauss, are now setting up to recycle propane bottles. The bottles will be cut up and shredded for scrap.

Return Postage Guaranteed. If undelivered, return to: *Environment Views*,
Alberta Environmental Protection, 9820 - 106 Street, Edmonton, Alberta T5K 2J6

MAIL POSTE
Canada Post Corporation / Société canadienne des postes
Postage paid Port payé
Blk Nbre
Permit 4000
Edmonton, AB

0111462
UNIVERSITY MAP COLLECTION
UNIVERSITY OF ALBERTA
TORY B-7
EDMONTON AB T6G 2H4

ENVIRONMENT UPDATE

Concordia's New Environmental Science Degree

Edmonton's Concordia College now offers a Bachelor of Science in Environmental Science.

Through the Department of Biology and Environmental Science, the program has been designed to provide graduates with a broad environmental background. Department faculty are all involved in environmental research, including toxicology, air and water quality, terrestrial ecology and genetics. Contact: Dr. S. Dalton, Co-ordinator, Department of Biology and Environmental Science, Concordia College, 7128 Ada Boulevard, Edmonton, T5B 4E4, 479-8481.

Exploring Alberta's Natural Areas

A natural areas site directory, *Alberta's Natural Areas: A Guide to Selected Sites*, is now available for $5.29.

The directory features 32 natural areas located throughout the province and describes the terrain at each site, the habitat types and wildlife species, any facilities on site, and includes a map and location description for each area. Contact Maps Alberta, 2nd Flr., North Petroleum Plaza, 9945-108 St., Edmonton, T5K 2G6, 427-3520 or Main Flr., Bantrel Bldg., 703-6 Ave., Calgary, T2P 0T9, 297-7389. For more information on Alberta's natural areas, call 427-5209.

The Natural Traveller

Athabasca University has compiled a directory of educational vacations, many of which have a strong environmental component. *Educational Travel '93* is available for $16.26 from Educational Travel, Marketing and Communications, Athabasca University, Athabasca, AB, T0G 2R0.

HOLD IT! Please complete and return this form if you would like a free subscription to *Environment Views* or if your mailing information has changed.

NAME

ORGANIZATION / COMPANY

DEPARTMENT / OFFICE / SECTION

ADDRESS CITY

PROVINCE / STATE COUNTRY POSTAL CODE

CHECK ONE:

☐ NEW SUBSCRIBER
☐ CHANGE OF INFORMATION (PLEASE QUOTE SUBSCRIPTION #): ____________

LETTERS

New Fact Sheet on Cars

Dear Editor:

I am taking this opportunity to congratulate you on a very timely and interesting issue of *Environment Views*: "Trapped by the Car" (Spring 1993). I have circulated the publication among the managers here at State of the Environment Reporting.

Environment Canada has also recently released a free bilingual publication on the automobile. State of the Environment Reporting Fact Sheet No. 93-1, "Environmental Implications of the Automobile" examines a number of issues regarding the car including the economy, environmental impacts, challenges remaining to be addressed and sustainability.

Rosaline Frith,
Environment Canada

Students Review *Environment Views*

Dear Editor:

I attend Rochester School, just north of Edmonton. Our Grade 9 class is doing a science unit on the environment. One of our projects is to review an issue of your magazine (I am reading Summer 1991).

I really enjoyed reading this magazine. It was fun and interesting. I liked the "Test Your R.Q." quiz. Another thing I liked about it was the cartoons. They made the magazine really fun to read. The article "The 4 Rs" was full of information and there was a lot in it that surprised me.

I am proud to say that our school is a green school and that all of us from Rochester enjoy your magazine.

Colleen Betts
Rochester

Editor's note: Thanks also to Colleen's classmates who wrote in.

University of Alberta Library

0 1620 0600 6728